

# Abstracts

## Keynote 3

### Women at work

#### K3.1 TREATMENT OF WOMEN, SEX, AND GENDER IN OCCUPATIONAL EPIDEMIOLOGICAL RESEARCH

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Women and men differ genetically, in working conditions and in their social roles. But they belong to the same species and live in the same society. How are these differences and similarities to be dealt with in epidemiological studies? A frequent method of dealing with sex and gender differences is to adjust for sex, but this procedure may lead to loss of important information because sex may be a surrogate for some working conditions. Some authors have tried to introduce correction factors differing by sex in toxicological studies, but these procedures may overcorrect or distort the data. How can we appropriately study women and men in the workplace without either missing important parameters specific to each sex or exaggerating the differences? Answers to this question are specific to each study population and each work situation. Men and women often differ in their work schedules, employment relationships, job titles, and task assignments. Also, they may be treated differently at work by supervisors, colleagues, and clients, and their extraprofessional responsibilities may interact with their work situation in different ways. Anthropometric and physiological differences must be thought about carefully as average differences between the sexes do not apply to all individuals, but it is likely that men's and women's bodies will not interact in the same way with many work stations. In addition to these generalities, study of a particular workplace will often reveal important ways in which sex and gender influence exposures and workplace constraints. For example, in some workplaces, shorter people may be closer to sources of toxins, and those with heavy family responsibilities may suffer from lack of access to telephones. Informal workplace practices may keep women from equipment they need, or they may force men to do more visibly dangerous manipulations. Qualitative studies

and, especially, workplace observations can be used to gain this kind of relevant information. At the same time, male-female differences should not be overestimated, because the distributions of men's and women's psychological and physiological characteristics overlap.

#### K3.2 CANCER INCIDENCE AMONG NURSES IN NORWAY

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**Introduction:** Nurses are potentially exposed to numerous suspected and established carcinogens, including ionising radiation, electromagnetic fields, sterilant gases and liquids, anaesthetic waste gases, chemotherapeutic drugs, and viruses associated with various cancers. In addition, many nurses are working rotating night shifts. Some previous studies have found increased rates of cancer at various sites, including breast cancer, among nurses. Whether the associations between occupation and cancer are results of socioeconomic/lifestyle factors, or whether the nursing occupation represents an independent risk factor needs further exploration.

**Methods:** A retrospective cohort study was performed. The cohort was established from The Norwegian Board of Health's registry of nurses and included women who graduated from a three years' nursing school between 1914 and 1984. The cohort was linked to the Cancer Registry of Norway. Observed number of cases was compared with expected, based on national rates. Analyses were performed for different subgroups of nurses.

**Results:** A total of 51 849 female nurses were followed from 1953–2002. Number of person-years were 2 293 873. For all nurses combined excess risks were found for cancers of the breast (SIR=1.14, CI 1.09 to 1.19), ovaries (SIR=1.15, CI 1.05 to 1.26), and malignant melanoma (SIR=1.18, CI 1.07 to 1.30). Significantly decreased risks were observed for cancers at different sites: oesophagus, stomach, liver, pancreas, lung, cervix, and kidney.

**Conclusion:** The increased risk of breast cancer observed among all nurses is consistent with findings in some other studies. Low risk of cancers related to alcohol, smoking, and sexual activity has also been observed in studies of nurses in the Nordic countries. More results from analyses on subgroups of nurses will be presented.